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furtherance of this benevolent plan, and I confidently hope that the funds which are necessary to complete this undertaking will not be found wanting.

The name of nearly every distinguished foreigner who has been lost to science during the last year has appeared upon the Foreign List of the Royal Society, and I cannot help considering it as a circumstance which does honour to the Royal Society, that it should thus have associated with it whoever is most eminent in the great aristocracy of European science. It is my wish, Gentlemen, and I feel assured that it is yours also, that the Royal Society should embrace the name of every distinguished man of science in the British dominions. At the last Anniversary it was my pleasing duty to present the Copley Medal to Professor Airy,—a name which would do honour to any Society, but which does not yet appear in the list of our Members: and I lament that I am not allowed to commemorate the name of that very distinguished philosopher, Sir John Leslie, upon this occasion in the obituary of the Royal Society. I look forward with hope, Gentlemen, to the time when the Royal Society shall be so circumstanced as to be free from such a reproach, or rather from such a misfortune.

Report of the Council to the Anniversary Meeting on St. Andrew's Day, 1832.

THE Council of the Royal Society have, during the past year, used their most earnest endeavours to render the Library as effective for the purposes of science, as the means at their disposal would enable them. They have been desirous, in particular, to make it as complete as possible in all those departments of science, which it is more especially the object of the Royal Society to cultivate and to advance. They have accordingly purchased, with the advice of the Library Committee, such books as were more immediately required for these purposes, at an expense of about £1600. It was evident, however, that the mere possession of these books by the Society would be of little avail to those who wished to use them, until they were arranged and catalogued according to some uniform and well-digested method. A Committee was therefore appointed to consider of the best plan of effecting this desirable object; and to suggest measures for obtaining a correct catalogue of the library, arranged under such specific heads as were best calculated to assist the inquiries of all those who might resort to it for information. Various plans for this purpose were proposed and discussed: and it was finally determined that in order to insure uniformity of execution, the whole labour of compiling the new classed Catalogue, and of conducting it through the press, should be confided, though still under the superintendence of the Committee, to one person only; provided a proper person could be found who was fully competent to so arduous a task, and also willing to undertake it. The Council have accordingly engaged Mr. Panizzi, of the British Museum, a gentleman of great literary attainments, and conversant with that kind of labour, to undertake

this charge ; and have no doubt that he will accomplish it to the full satisfaction of the Fellows of the Society at large, to whom the possession of such a classed Catalogue as the one proposed, will be advantageous in many ways, independently of its direct utility in reference to the employment of the library.

The whole of the sum at which the Arundel Manuscripts which have been exchanged for books, were valued, has now been received from the Trustees of the British Museum, and the account with them is thereby closed.

The Council have also directed the printing of an edition of the Abstracts made by the Secretaries and entered on the Journal Book of the Society, of such papers as have been read to the Society and ordered for publication in their Transactions, from the year 1800 inclusive, to the present time. They conceive that a collection of these Abstracts, which possess in themselves much intrinsic value, will form an useful sequel to the Abridgement of the Philosophical Transactions of which the public is already in possession, but which does not extend to a later period than the end of the last century. This work will form two thick octavo volumes, one of which is now completed and ready for delivery to subscribers. The proof sheets, at the desire of the Council, were read over by Mr. Lubbock and Mr. Children, and no alterations were made except for the correction of errors obviously arising from inaccurate transcription. The Council have also directed a general Index to be made of the contents of the Transactions from the year 1821 to 1830 inclusive.

Documents relating to the periods and heights of the Tides having been furnished to the Society, at the request of the Council, by favour of the Lords Commissioners of the Admiralty, who have obligingly ordered these returns to be made from the principal sea-ports of England, a Committee has been appointed for the purpose of examining and digesting them, and for printing such of the observations or results as they may deem useful.

The Committee for conducting the Meteorological Observations have been anxious to arrange a plan for insuring their accuracy, and increasing their utility. They find that standard instruments are much wanted for furnishing correct data in this department of science. This deficiency they are endeavouring to supply ; and have in particular been promised the kind assistance of Mr. Daniell and Dr. Prout in superintending the construction of a standard barometer of superior accuracy, on the indications of which they expect that the utmost reliance may be placed.

The telescope, which the Council, with the advice of a Committee, had requested Mr. Barlow to construct as an experiment, on the principles stated by him in his paper in the Philosophical Transactions, is now completed, and will soon be ready for trial.

The Council have awarded one of the Copley Medals to Mr. Faraday, for his discovery of Magneto-Electricity, as explained by him in his Experimental Researches in Electricity, published in the Philosophical Transactions for the present year.

Oersted's important discovery of the influence of voltaic electricity

on a magnetic needle, was rapidly succeeded by a series of minor ones, all tending to establish the existence of an intimate connexion between magnetism and electricity. The evidence, however, of that connexion, resting, as it did, on the mutual influence of magnets and wires in which electric currents passed, and in the development or induction of magnetism by electricity, was positive on one side only; to render it conclusive, it remained to be shown that electricity could be excited by magnetism: and this, by a series of experiments as simple as they are beautiful, founded on a train of correct reasoning, Mr. Faraday has happily accomplished.

Although the Council consider that the discovery of magneto-electricity fully entitles its author to the Copley Medal, they by no means limit the value of the papers in which it is detailed to this discovery, however important. Even the preliminary facts, as they fully establish volta-electric induction, had they at the time led no further, would have been of the greatest value; but they were in hands in which they could not long remain barren, and the expectation they held out of important results was soon realized. Beyond the details of the discovery, the author rapidly but clearly establishes the laws according to which electric currents are excited by a magnet. He satisfactorily applies these laws to the explanation of a very interesting class of phenomena previously observed, namely, the reciprocal action of magnets and metals during rotation. He at the same time establishes an important distinction among bodies which had long been considered as associated by phenomena common to them all; and gives indisputable evidence of electric action due to terrestrial magnetism alone. An important addition is thus made to the facts which have long been accumulating for the solution of that most interesting problem, the magnetism of the earth.

The Council have awarded another Copley Medal to M. Poisson, for his work entitled *Nouvelle Théorie de l'Action Capillaire*. In this work a great variety of problems are solved relative to molecular attraction, some of which had not before been attempted; but the most remarkable feature of the work is, the conclusion which the author draws, namely, that the elevation and depression of liquids in capillary tubes are essentially dependent on the rapid variation of density which takes place at the surface of the fluid, and without which, according to the author, that surface would continue plane; this is at variance with the theory given in the *Mécanique Céleste*, although indeed Laplace notices this change of density at the surface, as a necessary consequence of the action of the molecules upon each other (Supp., x. livre, p. 74.) The theorems and expressions of M. Poisson do not differ in form from those of the *Mécanique Céleste*; but the constants which are involved in these equations are not expressed by the same definite integrals. No difference ensues in the consequences which are deducible from them, because the law of molecular attraction being unknown, it is impossible to arrive at the value of these constants *à priori*, or otherwise than by observation.

M. Poisson has calculated the vertical and horizontal pressures upon a solid body plunged in a fluid: the value of the latter does not

agree with that given in the *Mécanique Céleste*. According to the expression of Laplace the body might take a motion of translation : to this objections were formerly made by Dr. Young, and it will be noticed with interest that these objections are now confirmed by M. Poisson. The Council have awarded the Medal to the author, in order to testify the high sense which they entertain of the importance of the researches contained in the work in question.

The Society next proceeded to the election of the Council and Officers for the ensuing year, when the following was declared to be the list:—

President : His Royal Highness the Duke of Sussex, K.G.—*Treasurer* : John William Lubbock, Esq. M.A.—*Secretaries* : Peter Mark Roget, M.D., John George Children, Esq.—*Foreign Secretary* : Charles König, Esq.

Other Members of the Council : Francis Baily, Esq. ; Captain Francis Beaufort, R.N. ; Mark Isambard Brunel, Esq. ; Rev. William Buckland, D.D. ; Samuel Hunter Christie, Esq. M.A. ; William Clift, Esq. ; Rev. James Cumming, M.A. ; Benjamin Gompertz, Esq. ; Joseph Henry Green, Esq. ; George Bellas Greenough, Esq. ; William George Maton, M.D. ; Roderick Impey Murchison, Esq. ; William Hasledine Pepys, Esq. ; Stephen Peter Rigaud, Esq. M.A. ; Rev. Richard Sheepshanks, M.A. ; Rev. William Whewell, M.A.

December 6, 1832.

WILLIAM GEORGE MATON, M.D., Vice-President, in the Chair.

Decimus Burton, Esq. ; Charles Purton Cooper, Esq. LL.D. ; and Edward Ayshford Sanford, Esq. M.P. ; were elected Fellows of the Society.

December 13, 1832.

JOHN WILLIAM LUBBOCK, Esq. M.A., V.P. and Treasurer, in the Chair.

A paper was read, entitled, “On the extensive atmosphere of Mars.” In a Letter to His Royal Highness the President. By Sir James South, Knt. F.R.S.

In this paper the author gives an account of a further observation which corroborates the conclusion he had stated in a former communication “On the extensive atmosphere of Mars,” namely, that no indication now existed of any atmosphere being attached to that planet. A star retained its light blue colour, and its full brilliancy and comparative steadiness till the very instant of its occultation by Mars. At its emersion it was seen nearly dichotomised. The author concludes, that either some physical change has occurred in the atmosphere of that planet, or that the observations of Cassini and of Roemer were inaccurate.